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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/677,284	10/02/2000	William L. Goodman	GRI-00-016	4279

7590 11/20/2003

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EXAMINER

VARTANIAN, HARRY

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/677,284

Applicant(s)

GOODMAN ET AL.

Examiner

Harry Vartanian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10/20/2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**Detailed Action**

***Drawings***

1. The drawings are objected to because in figures 2a and 2b the units for sum and trial offset should be defined. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification Objections***

2. The disclosure is objected to because of the following informalities:
  - the word "sine" is used in the disclosure when the context implies the use of the word ***sign***.
  - the word "compariter" is misspelled. The proper spelling is ***comparator***.
  - In table one the units for signal strength and signal strength without casing ***pT*** should be defined.Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 7 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or

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with which it is most nearly connected, to make and/or use the invention. The specification states that "the window offset and carrier phase are selected by choosing those which **minimize** the bit error rate." Maximizing bit error rate does not support the proper operation of the disclosed invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by De Gaudenzi et al(US Pat #6,466,566). De Gaudenzi et al discloses a blind adaptive receiver for PSK(Column 3 line 60-63) systems that "is robust to the interferers frequency error and is invariant to a possible carrier phase offset." (Column 3, Lines 10-13) In Claim 6, De Gaudenzi et al further describes his receiver as "having a plurality of detector units, each detector unit being arranged to accept the samples of the incoming data stream within a respective observation window extending over a predetermined number of samples, the observation windows for said plurality of detector units being delayed relative to each other." (Claim 6)

Furthermore, De Gaudenzi et al discloses the use of his adaptive receiver to estimate signal carrier phase(Column 15, Lines 12-16). Moreover, in fig 2 it is shown that once the

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carrier phase is estimated the symbols are then decoded. Therefore, all the limitations of Claims 1 and 2 are met.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Gaudenzi et al in view of Petranovich(US Pat #5,625,652). De Gaudenzi et al meets all the limitations of Claim 3(Please see above paragraphs) except the use of offset measuring and estimation for his adaptive receiver.

However, Petranovich discloses "a frequency and phase estimator 16 serves to eliminate the frequency offset and carrier phase errors"(Column 6 lines 14-16) for his PSK window synchronization system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that De Gaudenzi's PSK detector use window and carrier offset estimation for his bank of detectors. The motivation to do combine is that synchronization time can be greatly reduced if window estimation is used rather than blind or set windowing.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Gaudenzi et al in view of Matsumoto(US Pat #4,763,331). De Gaudenzi et al meets all the limitations

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of Claim 4(Please see above paragraphs) expect the use of maximum increasing function of absolute value for offset estimation.

However, Matsumoto discloses a "decoding method according to claim 3, wherein the reliability information is a monotonic increasing function of the absolute value of a difference between the two summations." (Claim 5) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that De Gaudenzi's PSK detector use a maximum increasing function of absolute value for offset estimation in his receiver bank. The motivation to do combine is that increasing function of absolute value is a common statistical measurement method.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Gaudenzi et al in view of Eastmond et al(US Pat #6,088,337). De Gaudenzi et al meets all the limitations of Claim 5(Please see above paragraphs) expect the use of maximum sum of squares for his carrier detection.

However, Eastmond et al discloses "a function of the sum of the squares of the out-of-phase autocorrelation, are commonly used to determine good synchronization words"(Table 2) for his invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that De Gaudenzi's PSK detector use sum of squares for measuring and comparing the results of his receiver bank. The motivation to do combine is sum of squares is a common statistical method to measure the magnitude of a number.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Gaudenzi et al in view of Kumar(US Pat #5,966,401). De Gaudenzi meets all the limitations of

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Claim 6(Please see above paragraphs) expect the use of maximum sum of absolute values for his window and carrier phase detection.

However, Kumar discloses a receiver where "the correlation sums 31 and 33 are propagated to the absolute-value functions 35 and 37, respectively, which remove the polarity information from the correlation sums by discarding sign-bit information"(Column 7, Lines 1-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that De Gaudenzi's PSK detector use sum of absolute values for measuring and comparing the results of his receiver bank. The motivation to do combine is sum of absolute values is a common statistical method to measure the magnitude of a number.

### ***Claim Objections***

**9.** Claims 8-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 703.305.8698. The examiner can normally be reached on 9-5:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703.305.4714. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


Harry Vartanian  
Examiner  
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HV

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**SUPERVISORY PATENT EXAMINER**  
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